



Ring-billed, Herring, and Great Black-Back Gull Study: Progress Report



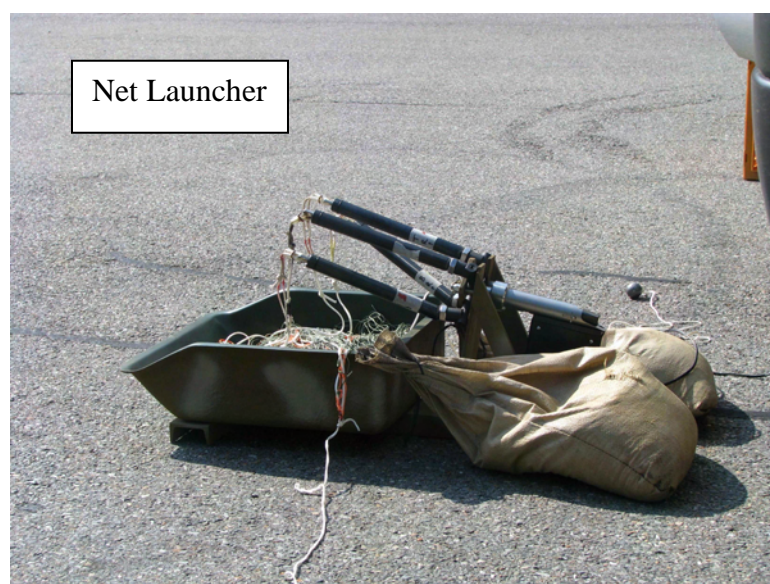
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Massachusetts Department of Conservation and Recreation
Division of Water Supply Protection
Office of Watershed Management
Natural Resources Section

INTRODUCTION

This report presents a summary of activities that took place during the fall of 2008 to spring 2009. At this time, most satellite movement data has not been analyzed. In addition, capture data is still being processed. A more complete report will be written in the future, and a spatial database of gull movements will be developed and distributed.

RESULTS - trapping



Trapping efforts during this field season began in September 2008 and continued until March 2009 and were conducted opportunistically 1-3 times/week. In summer 2008, a net launcher and net gun were purchased for the study. The net launcher (photo left) was used almost exclusively for capture. A variety of capture locations were utilized (Fig. 1), including the shoreline of Wachusett Reservoir. To date, 483 gulls have been captured (Table 1).

Table 1. Summary of trapping effort, January 2008 - March, 2009

	Ring-billed	Herring	Black-back	Total
Wachusett	241	75	18	334
Quabbin	139	9	1	149
Total	380	84	19	483

Following capture, all birds were fitted with an aluminum federal leg band. A uniquely numbered colored leg band was placed on the opposite leg of all birds (Fig. 2). Finally, on most birds, a colored, uniquely numbered wing-tag was attached to each wing. These wing-tags made identification from a distance possible, particularly when seeing or reading the leg bands was difficult. Wing-tags were color-coded based on a capture site's proximity to either Wachusett or Quabbin Reservoir. Wing-tags were secured to the birds with a single rivet attached through the patagium (Fig. 2).



Figure 1. Capture sites used during gull study, 2008-2009.

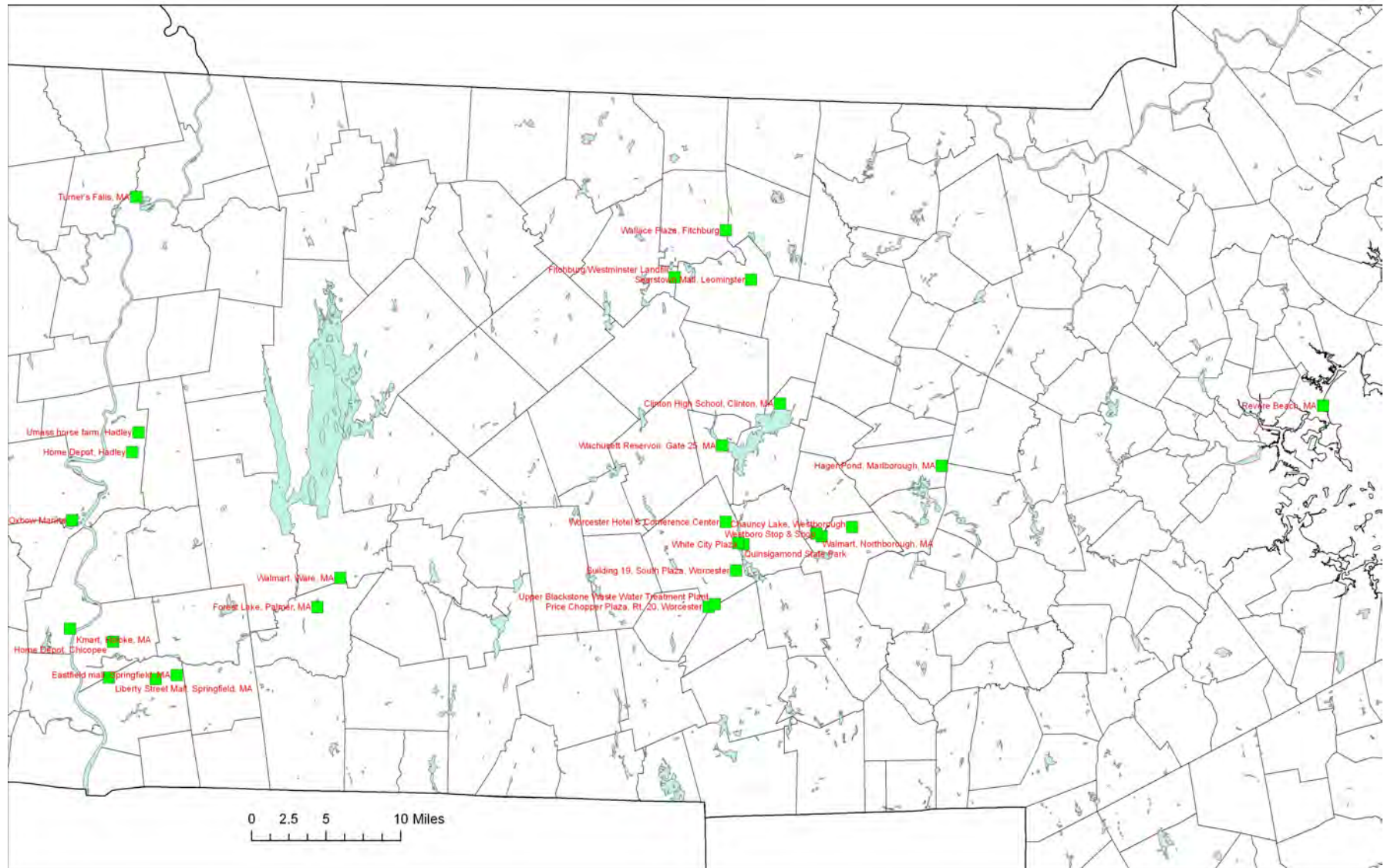




Fig. 2. Adult ring-billed gull fitted with a patagial tag and leg bands.

On a small number of gulls, satellite transmitters were attached instead of wing-tags. Currently, there are satellite transmitters on 5 ring-billed gulls (7 deployed; 2 gulls lost), 9 herring gulls (10 deployed; 1 lost) and 1 black-back gull. Transmitters were attached using a backpack harness.

Teflon tape backpack harnesses were fitted snugly on the bird and sew into place using a combination of abrasion resistant fishing line and quick set glue (Fig. 3). Three different types of transmitters were deployed. A 45-gram GPS equipped transmitter was deployed on the adult great black-back gull. Two 30-gram and four 22-gram GPS equipped transmitters were deployed on adult herring gulls. In addition, three 20-gram non-GPS



Fig. 3. Adult herring gull fitted with a 30-gram solar transmitter.

equipped satellite transmitters were deployed on herring gulls. The ring-billed gulls received 9.5-gram non-GPS equipped satellite transmitters. All transmitters were solar-powered and have the potential to last several years.

RESULTS – wing-tag sightings

From February 2008 until 1 April 2009, 806 sightings were reported of wing-tagged or leg banded birds captured during our study. A majority of the sightings were reported from the public, either through avid birders or casual observers. Sightings have covered an extensive geographic area and ranged from Canada to Georgia (Table 2, Figures 2, 3). Not surprisingly, a vast majority of these sightings were of tagged ring-billed gulls. However, close to 30 herring and 20 great black-back gulls have been sighted. In addition, several gulls have been sighted that have been tagged for 12+ months.

Table 2. Locations of reported wing-tagged gulls, February 2008-April 2009.

STATE/PROVENCE	# BIRDS SEEN
MA	517
CT	69
RI	20
NY	16
NJ	12
PA	11
MD	9
NH	8
NEWFOUNDLAND	6
VA	4
ME	4
QUEBEC	3
PEI	3
NC	3
LABRADOR	2
NOVA SCOTIA	1
MANITOBA	1
GA	1
DE	1

In Massachusetts, gulls have been sighted from the Connecticut River east. A majority of the sightings have been in central Massachusetts, and to date, no birds have been seen in Massachusetts west of the Connecticut river or on Cape Cod. Tagged gulls have been seen in a variety of locations, although most birds are sighted in association with food or fresh water (Table 3).

Table 3. Summary of sighted wing-tagged birds, February 2008-April 2009.

Location of Sighting	Total Number of Birds Seen
Field	21
Landfill	18
Fresh water	293
Salt water	80
Park	31
Parking lot	294
Wachusett or Quabbin Reservoirs	49
Urban (no details provided)	19
Water Treatment Plant	10
Unknown	6

SATELLITE DATA

Currently, there are 15 active satellite transmitters deployed on gulls (Table 4). To date, 3 transmitters (2 ring-billed; 1 herring) have been deployed and subsequently lost. It is likely that the birds died or were predated, and we were unable to recover the transmitter.

Table 4. Summary of deployed satellite transmitters.

Transmitter #	Species	Date Deployed	Still Active	GPS capable
87424	Ring-billed	11/17/2008	NO	NO
87425	Ring-billed	11/10/2008	YES	NO
87426	Ring-billed	11/5/2008	YES	NO
87427	Ring-billed	10/29/2008	YES	NO
87428	Ring-billed	11/10/2008	YES	NO
87429	Ring-billed	12/4/2008	YES	NO
87430	Ring-billed	11/12/2008	NO	NO
80149	Herring	3/11/2008	YES	YES
80150	Herring	2/8/2008	YES	YES
80151	Black-back	3/27/2008	YES	YES
87431	Herring	10/9/2008	YES	YES
87432	Herring	1/21/2009	YES	YES
87433	Herring	11/5/2008	YES	YES
87434	Herring	1/20/2009	YES	YES
33066	Herring	3/27/2008	NO	NO
33067	Herring	1/21/2009	YES	NO
33071	Herring	1/27/2009	YES	NO
33073	Herring	11/5/2008	YES	NO



Figure 2. Locations of sighted wing-tagged gulls, February 2008-April 2009.

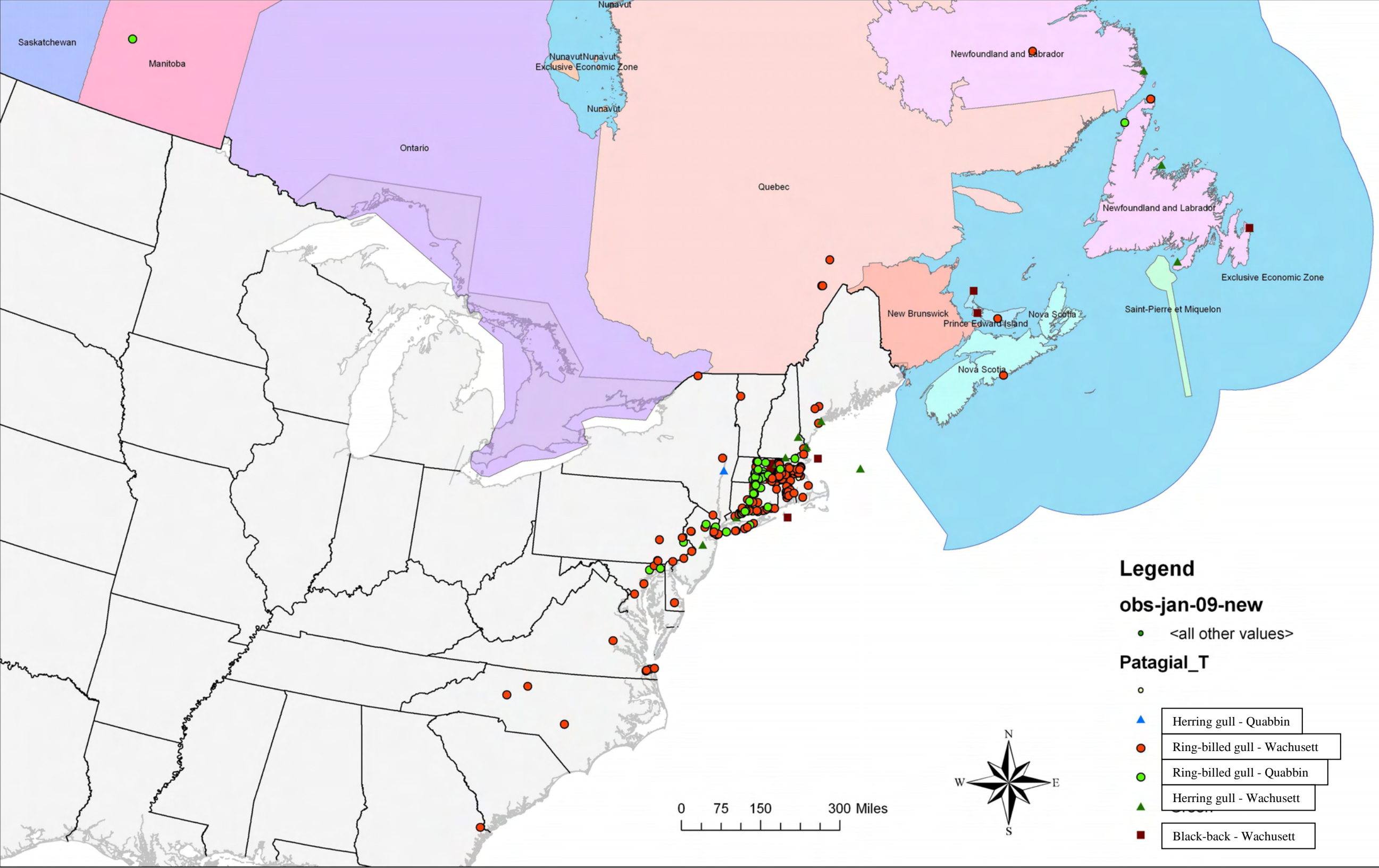
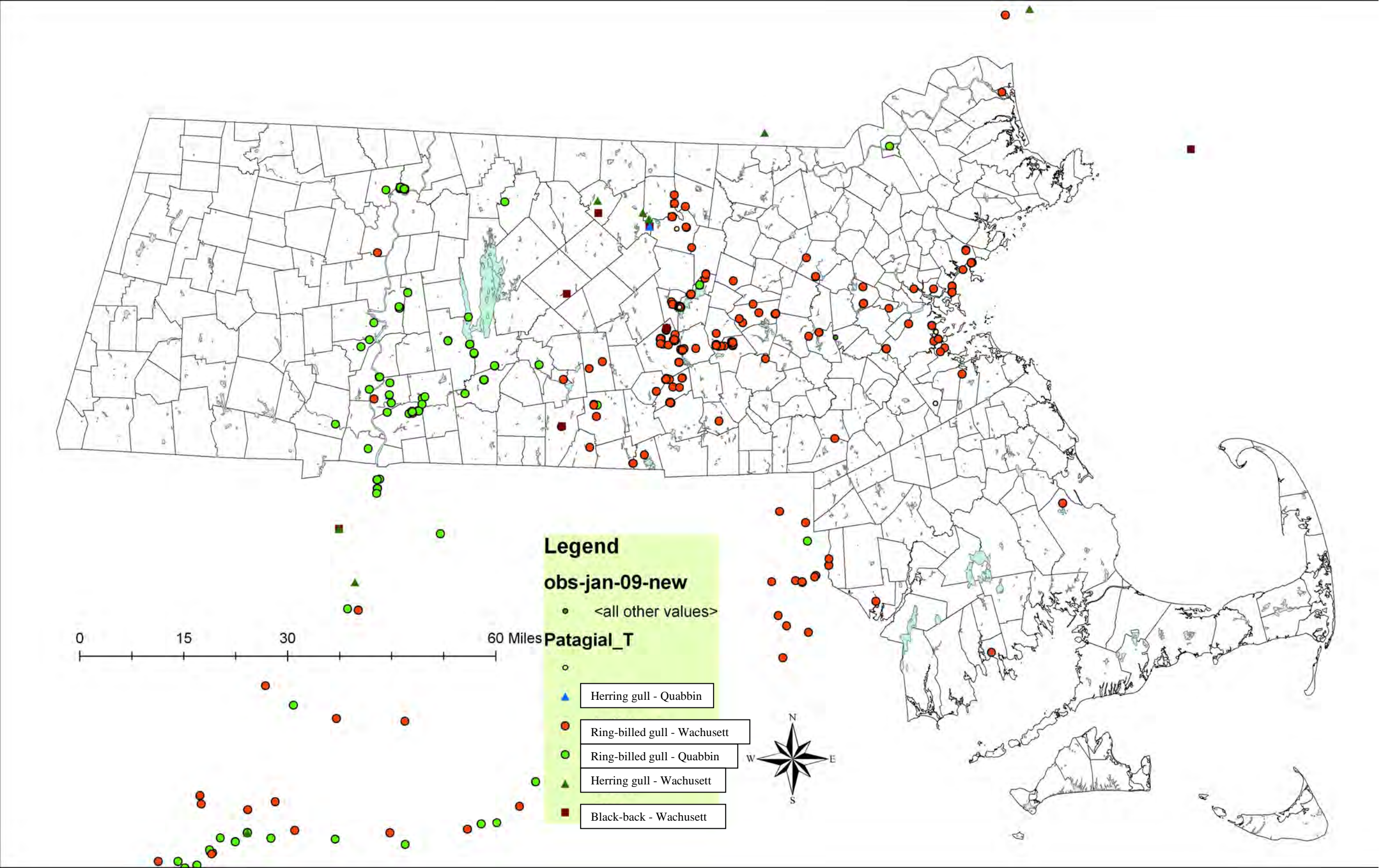


Figure 3. Locations of sighted wing-tagged gulls within Massachusetts, February 2008-April 2009.

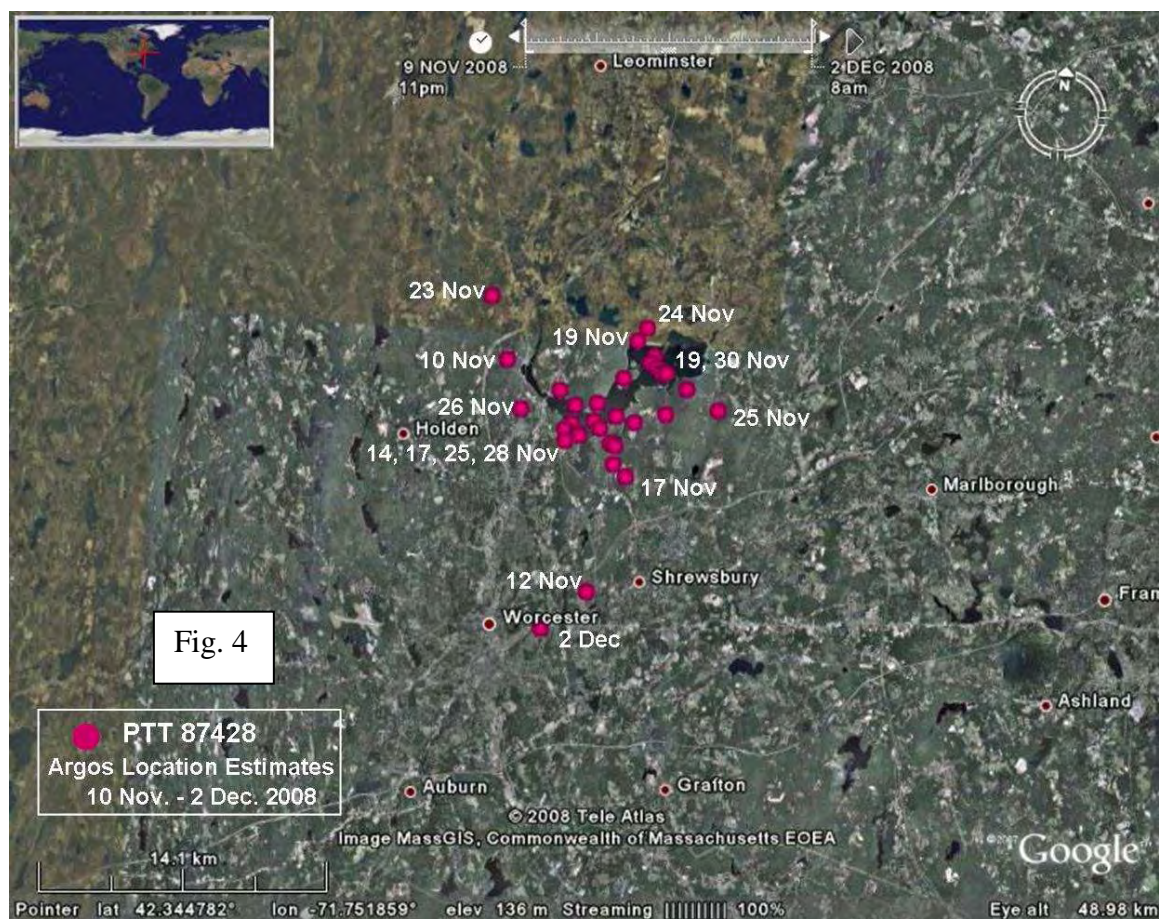


Each satellite transmitter records up to 6 locations per day, and data is transmitted every 2 weeks. Preliminary data indicates a tremendous amount of movement both within Massachusetts and throughout the east coast. In addition, the satellite data have indicated that Wachusett Reservoir is used often by both herring and ring-billed gulls. In the near future, satellite data will be analyzed to summarize habitat use by each individual throughout the whole study period.

Individual Examples

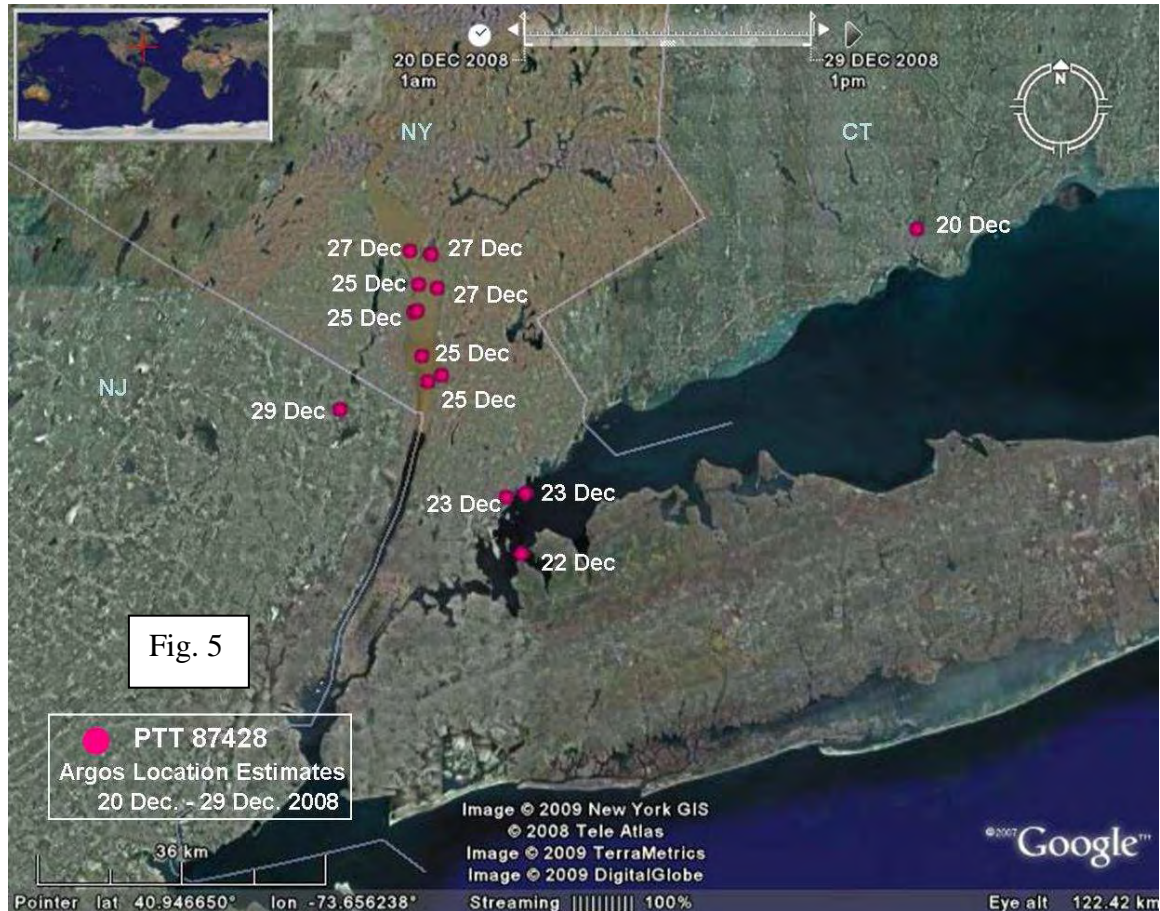
Ring-billed gull 87428

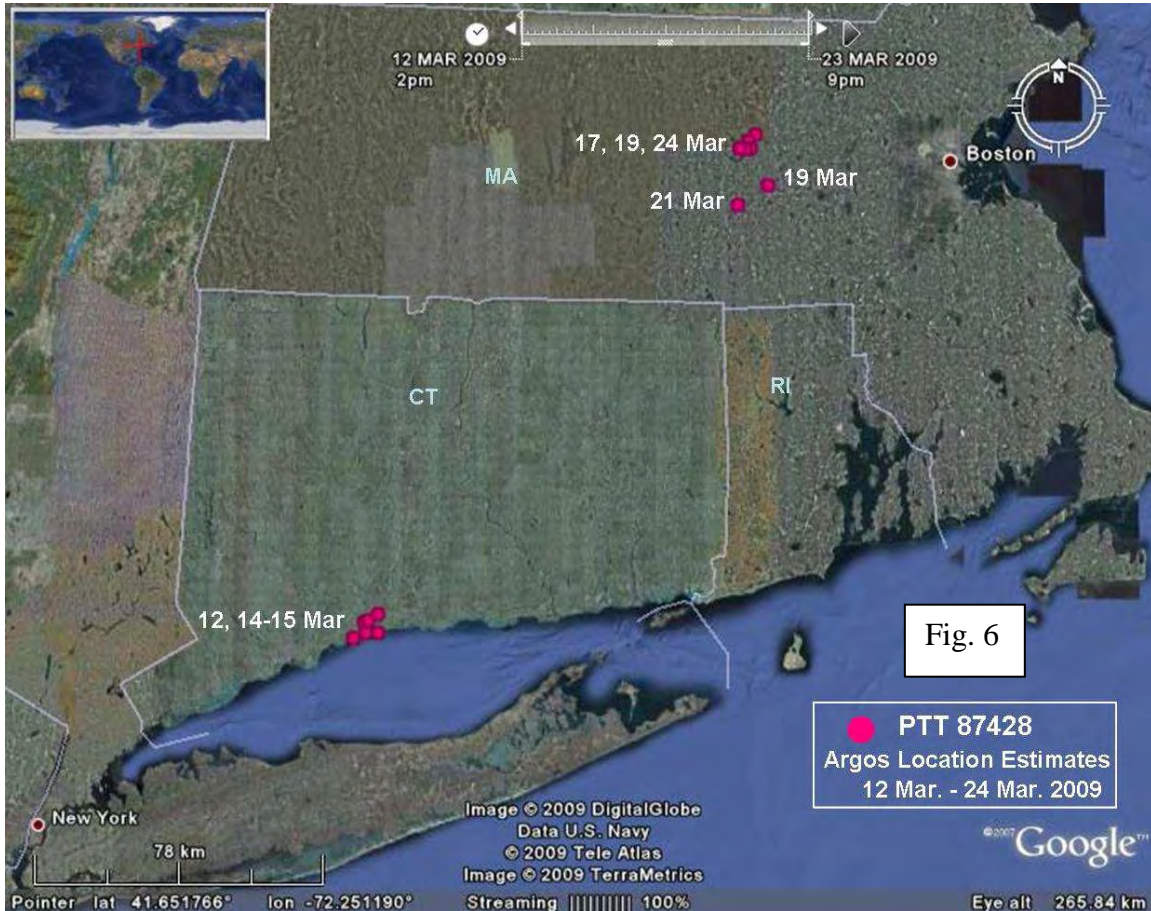
Ring-billed gull 87428 was captured on 11/10/2008 at Searstown Mall in Leominster, MA. During the rest of November and most of December, the gull was in and around



Wachusett Reservoir (Fig. 4). In late December, the gull moved south into southern New York and Long Island (Fig. 5). Gull 87428 stayed in the same general location near Long

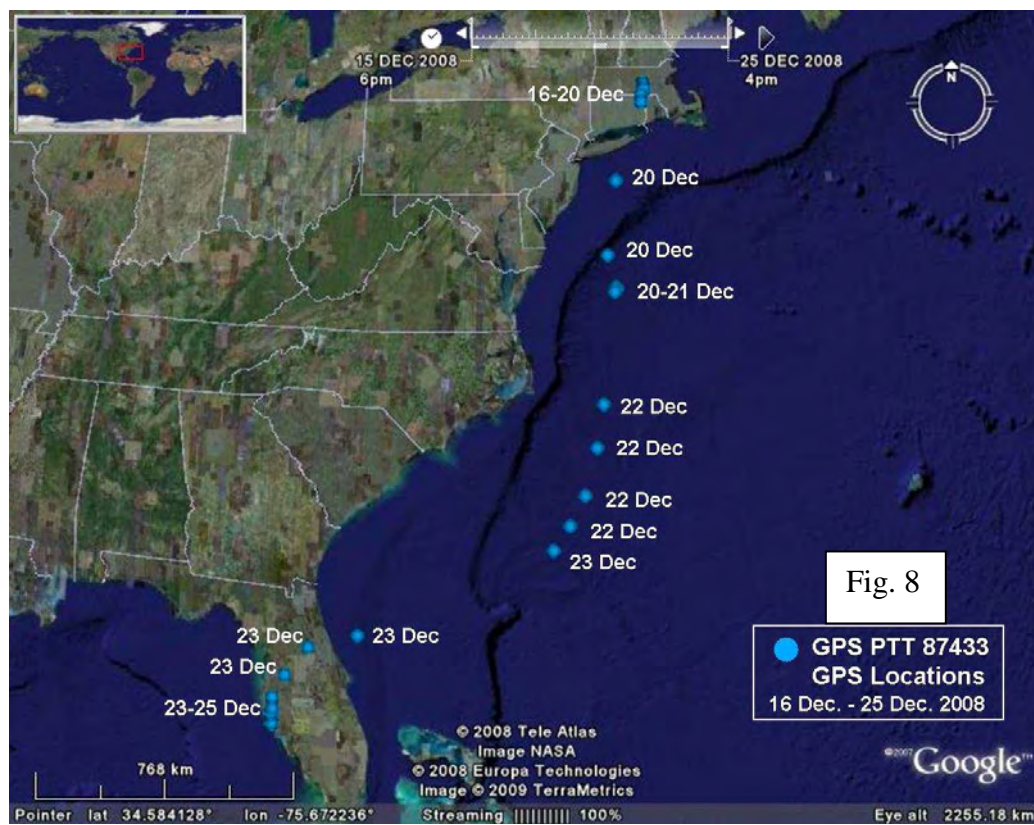
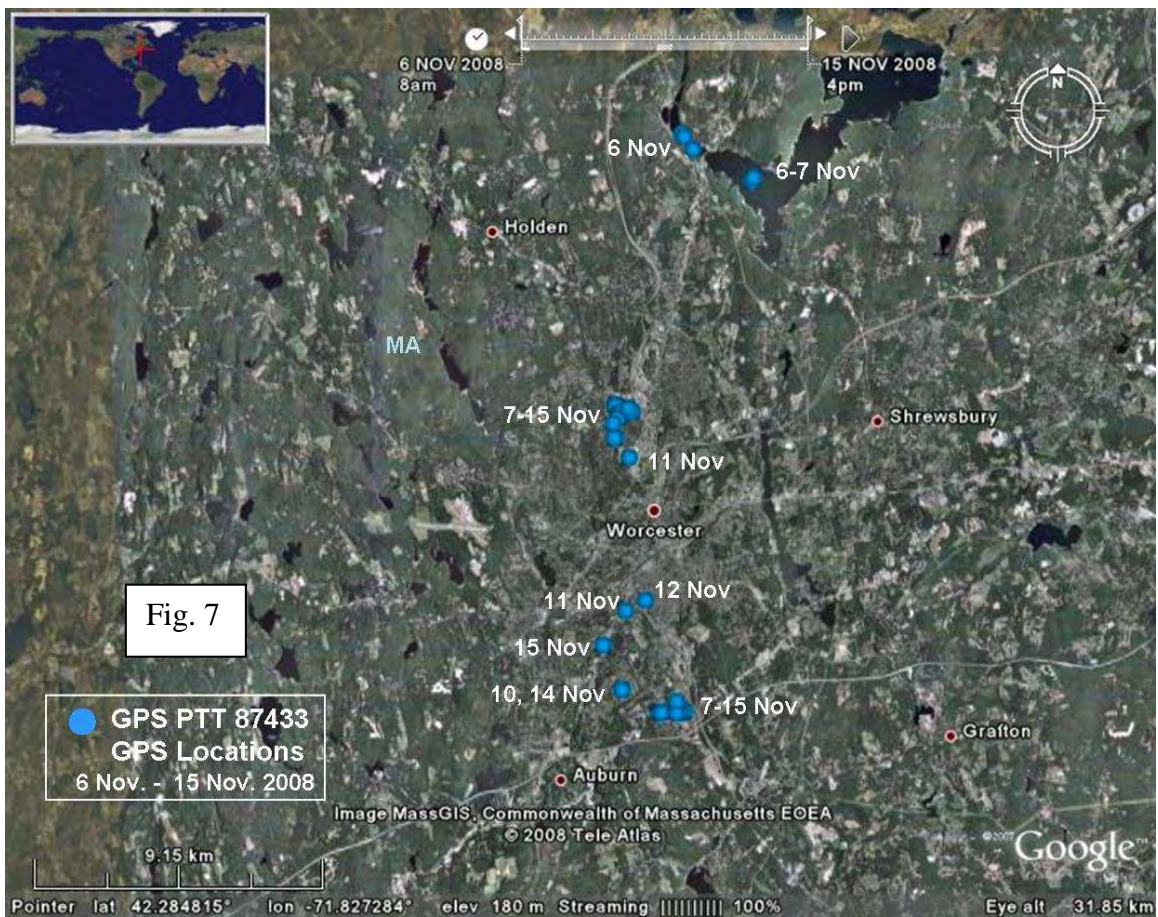
Island throughout the remainder of the winter into early March. In mid-March, the gull moved quickly back north into Massachusetts and again began using Wachusett Reservoir and the surrounding area (Fig. 6).

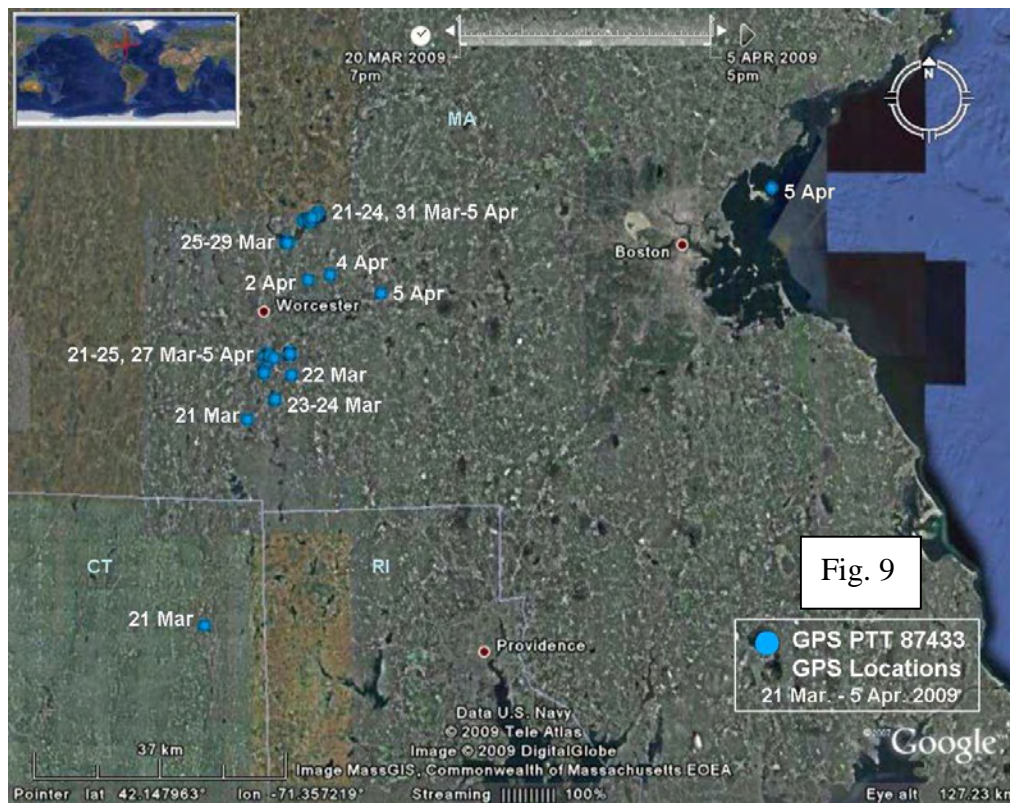




Herring Gull 87433

Herring gull 87433 was captured on 11/5/2008 at the Blackstone Valley Water Abatement Plant in Worcester, MA. Following capture, 87433 remained in central Massachusetts utilizing Wachusett Reservoir, the water abatement facility and other areas (Fig. 7). This gull's movements were similar throughout most of December. Then in mid-December, the gull made a large scale movement out into the Atlantic Ocean heading south. It ended up stopping in central Florida on the western coast (Fig. 8). Gull 87433 stayed in the general vicinity of Port Charlotte, Florida throughout the winter into early March. By mid-March, the gull was moving north again, this time staying closer to the coastline. By the end of March and into April, gull 87433 was back in Massachusetts and began utilizing areas in central Massachusetts, including Wachusett Reservoir (Fig. 9).







PLANS FOR 2009/2010

A tremendous amount has been accomplished so far from the priority list developed in the last progress report. In that report, a list of goals were written for the 2008 season and many were accomplished, including the purchase of a rocket net, the purchase of lighter satellite equipment, starting the capture effort earlier in the year, and increasing the sample size. A list of goals for the upcoming season is listed below:

- Purchase additional satellite equipment
 - The focus this season will be on deploying additional ring-billed gull transmitters. Ideally, transmitters that can be tracked and recovered in the event of bird mortality will be purchased.
- Continue to trap throughout the fall
 - The technique for quickly and efficiently capturing gulls has progressed tremendously. Dedicated trapping efforts will continue next fall and winter to increase the number of tagged gulls in the population.
- Collaborate with other researchers
 - Over the course of the study, the Division has been contacted or has contacted other researchers studying gulls. A collaborative effort to try and pool information will be initiated, particularly with those researchers conducting similar work or working with the same species in different locations.